UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/734,432	12/11/2000	George I. Davida		3562

7590   08/28/2003

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EXAMINER
KIBLER, VIRGINIA M

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

		Application No.	Applicant(s)
Office Action Summary		09/734,432	DAVIDA ET AL.
		Examiner	**Art Unit**
		Virginia M Kibler	2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-11_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-11_ is/are rejected.

7)☒ Claim(s) _1-11_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _11 December 2000_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

Oath/Declaration

1.   The oath or declaration is defective. A new oath or declaration in compliance with 37

CFR 1.67(a) identifying this application by application number and filing date is required. See

MPEP §§ 602.01 and 602.02.

> The oath or declaration is defective because:
> The full name of each inventor (family name and at least one given name together with
> any initial) has not been set forth.

Specification

2.   The disclosure is objected to because of the following informalities: " ___/__ , filed

2000" should be changed to "60/170,672, filed 1999" on page 1 line 5.

> Appropriate correction is required.

3.   The abstract of the disclosure is objected to because "enrolment" should be changed to

"enrollment" on lines 2 and 4. Correction is required. See MPEP § 608.01(b).

Claim Objections

4.   Claims 1-11 are objected to because of the following informalities:

Claim 1 is objected to because of the following informalities: "an 1 information" should

be changed to "an information" on line 2, and "identity" should be changed to "identity." on line

4.

Claim 3 is objected to because of the following informalities: "information" should be

changed to "information." on line 3.

Claims 2 and 4 are objected to because they depend on claim 1.

Claim 5 is objected to because of the following informalities: "indices." should be changed to "indices;" on line 3, "templates." should be changed to "templates;" on line 5, and "pair" should be changed to "pair;" on line 6.

Claim 9 is objected to because of the following informalities: "validatioin" should be changed to "validation" on line 1.

Claims 6-8 depend on claim 5, and are therefore objected to.

Claim 10 is objected to because of the following informalities: "The private biometric identification" on line 1 should be changed to "A private biometric identification", "characteristics of a body part" should be changed to "characteristics of a body part;" on line 2, "database." should be changed to "database;" on line 3, "point." should be changed to "point;" on lines 4 and 6.

Claim 11 depends on claim 10, and is therefore objected to.

Appropriate correction is required.

5.   Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel claim 4, or amend claim 4 to place claim 4 in proper dependent form, or rewrite claim 4 in independent form. Claim 4 merely recites line 2 of claim 1 with no further limitation, "...information signal impressed with characteristics of a body part."

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Musgrave

et al. (6,505,193).

Regarding claim 1, Musgrave et al. ("Musgrave") discloses an identification system

including a body part input for generating an information signal impressed with characteristics of

a body part (Figure 8, elements 350 and 355), a pointer generation means to the body part input

to obtain one or more pointers to the database (Col. 5, lines 65-67), and a means to link at least

one of the pointers to the identity (Col. 6, lines 58-67). Musgrave does not expressly state using

an index generation means, however, considering indices are pointers to the database locations

(Spec. page 9, line 20) Musgrave discloses using digital certificates to point to a database

partition having stored biometric images (Abstract, lines 4-10; Col. 5, line 67, Col. 6, lines 1-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to have modified the digital certificates used by Musgrave to include explicitly stating

using an index to point to database locations because it narrows the database search which allows

for expedited and reliable identification (Abstract, lines 13-20).

Regarding claim 4, the arguments analogous to those presented above for claim 1 are

applicable to claim 4.

8.   Claims 2, 3, 5, 6, 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Musgrave et al. (6,505,193) as applied to claim 1 above, and further in view of Davida et al. (*On*

Enabling Secure Applications Through Off-line Biometric Identification).

Regarding claim 2, Musgrave does not appear to recognize including the index as a

function of a subset of data of the information signal. However, Davida et al. ("Davida") teaches

that it is known to create a function of a subset of data of the information signal (Page 152, Sect.

3.1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

invention to have modified the pointers to the database disclosed by Musgrave to include

creating a function of a subset of data of the information signal as taught by Davida because it

provides for on-line identification systems in which the privacy of a biometric template is

protected on the database (Page 149, Col. 2).

Regarding claim 3, Musgrave does not appear to recognize the index generation

including means to generate one or more indices each from different partial information from the

information or transformation of the information. However, Davida teaches that it is known to

provide information signal transformation (Page 154, Sect. 5.1). Therefore, it would have been

obvious to one of ordinary skill in the art at the time of the invention to have modified the

pointers to the database disclosed by Musgrave to include information signal transformation as

taught by Davida because by providing a transformation of the user's biometric information

rather than the information itself it protects the privacy of the biometric information in the

database (Page 149, Col. 2).

Regarding claim 5, the arguments analogous to those presented above for claim 1 are

applicable to claim 5. Musgrave does not recognize including information hiding means to the

body part input. However, Davida teaches that it is known to provide information hiding means

to the body part input to obtain transformed biometric templates (Page 152, sect. 3.1). Davida

further teaches that it is known to include transmission of the transformed biometric template and

verification means of the transformed biometric template with the template in the database (Page

150, Sect. 2.1). Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to have modified the pointers to the database disclosed by Musgrave to

include further limitations of claim 5 as taught by Davida because by providing a secure data

transmission it protects the privacy of the biometric template in the database (Page 149, Col. 2).

Regarding claim 6, Musgrave does not appear to recognize including multiple readings.

However, Davida teaches that it is known to include multiple readings of the body part (Page

156, Sect. 6.1). Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to have modified the reading of the body part disclosed by Musgrave to

include multiple readings as taught by Davida because it provides a lower number of expected

errors (Page 156, Sect. 6.1).

Regarding claim 8, Musgrave does not appear to recognize where the verification is a

hamming weight test. However, Davida teaches that it is known to use the hamming weight test

to verify a user (Page 149, col. 2; Page 156, Sect. 6.1).

Regarding claim 9, Musgrave discloses the verification includes validation for

authorization 56 (Figure 2).

Regarding claim 10, the arguments analogous to those presented above for claim 5 are

applicable to claim 10. Note, Musgrave discloses transmitting the pointer (index) 530,

transmitting the biometric template to accept point 550, transmitting of the generated biometric template to access point 530, and verifying the two 555 (Figure 13).

Regarding claim 11, Musgrave discloses a biometric template that includes a digital certificate that acts as a pointer (index) to the database (Col. 5, lines 65-67) along with the information signal of the body part 525 (Figure 13)

9.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Musgrave et al. (6,505,193) in view of Davida et al. (*On Enabling Secure Applications Through Off-line Biometric Identification*) as applied to claim5 above, and further in view of Canetti (*Towards Realizing Random Oracles: Hash Functions that Hide all Partial Information*).

Regarding claim 7, the arguments analogous to those presented above for claim 5 are applicable to claim 7. Note, Davida discloses using a hash function as an information hiding means (Page 152, Sect. 3.1). Davida does not appear to recognize using exclusive-or for signal transformation. However, Canetti teaches that it is known to use a hash function including exclusive-or for signal transformation (Page 465, para. 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the hash function disclosed by Musgrave and Davida to include using exclusive-or, as taught by Canetti, in order to hide all partial information of the signal (Abstract, lines 16-18) to protect a user's biometric template.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,070,159 to Wilson et al. for expandable biometric searching;

U.S. Pat. No. 6,507,912 to Matyas, Jr. et al. for protection of biometric data via key-

dependent sampling; and

Davida et al., "On the relation of error correction and cryptography to an off line

biometric based identification scheme."

Contact Information

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072.

The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 306-0377.

VK
8/24/03

MEHRDAD DASTOURI
PRIMARY EXAMINER